



# GENERAL KNOWLEDGE

## General Instruction for Pneumatic Actuator

For your own safety, please read the instruction below before you inquiring / using our products.

### Precautions in piping / installment

- According to the required driving torque and select corresponding actuator specifications by the output torque standard data in the 4Bar air pressure when install the valve. Actuator's torque should be more than 25% of the valve's torque requirement.

- The correct installation is directly affect the integral performance. The central axis of actuator MUST BE coaxial with the valve pole. Please notice the valve and the actuator needs to turn off the connection, examine the valve, after fix by using the right screw, opening and closing should not be any phenomenon about suddenly fast, suddenly slow, or stop.

- When piping with the large pneumatic valve, because of the weight of the valve, please install the support frame to avoid deformation of pipeline and valve body.

- Please confirm there's enough space for maintenance or manual operation.

- Actuator contains fine adjustment screw to ensure the opening and closing positions correct.

- To keep its best situation, please arrange regular inspect and change parts by its usage frequency. The air source should be kept dry and clean, and also drainage and sewage regularly for air filter components at the front end.

- Actuator's switch can be controlled by Single-acting or Double-acting 5 ports 2 ways solenoid valve.

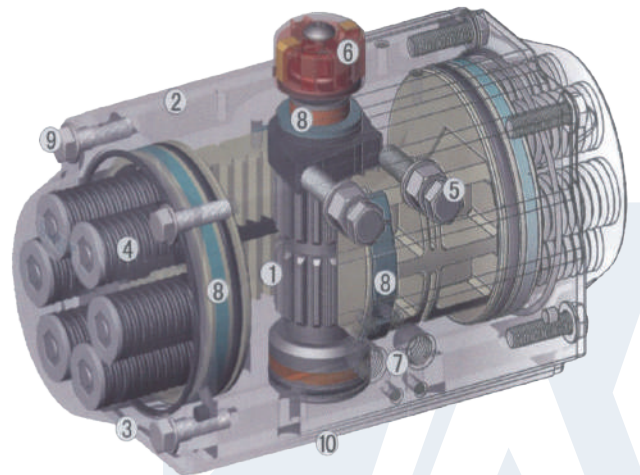
- Please double check the pipeline direction, any leak wire connection before using the valve.

### Malfunction detection and elimination

Situation	Check item	Solution
Valve unable to move	Check the solenoid valve, coil, and the core are malfunction or not.	Exchange solenoid, coil, clean impurities.
	Examine the pneumatic acuator, check sealing parts and cylinder.	Exchange sealing parts and cylinder.
	Impurities stuck the piston inside the actuator.	Clean impurities, and replace broken parts.
	If there's extra manual mechanism, its handle in the manual position.	Switch the handle to pneumatic control.
Valve works slow, inching	Insufficient pneumatic pressure.	Increase pressure.
	Spool and other parts assembly uneven or too tight.	Increase actuator model spec.
	Actuator output torque too small.	Reassemble parts.
	Pneumatic pipeline block or flow too small.	Remove clog, replace filter.
Limit switch no signal feedback	Power circuit error or break.	Overhaul circuit.
	Cam incorrect position in the switch.	Adjust Cam to the correct position.
	Micro switch damaged.	Replace limit switch

### Main parts & Material

No.	Part name	Material
1	Gear output shaft	Carbon steel
2	Valve body	Extrude aluminum alloy
3	Cover	Die-cast aluminum alloy
4	Spring component	Alloy steel
5	Fine adjustment screw	Stainless steel
6	Position indicator	PP
7	Piston	Die-cast aluminum alloy
8	Wear ring	NYLON 46
9	Cover screw	Stainless steel
10	O-ring	NBR

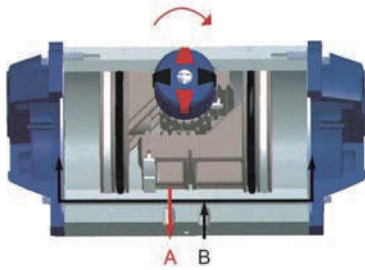




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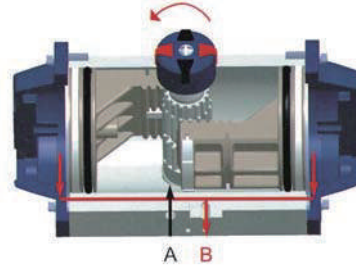
## Principle of operation for Double acting torque.

Valve OFF



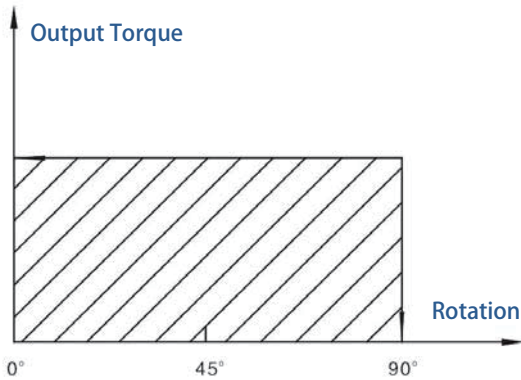
Compressed air input by **B Port**, make the piston and output shaft turn clockwise. Close the valve. Expel the air in the piston by **A port**.

Valve ON



Compressed air input by **A Port**, make the piston and output shaft turn counterclockwise. Open the valve. Expel the air in the piston by **B port**.

## Double acting torque reference

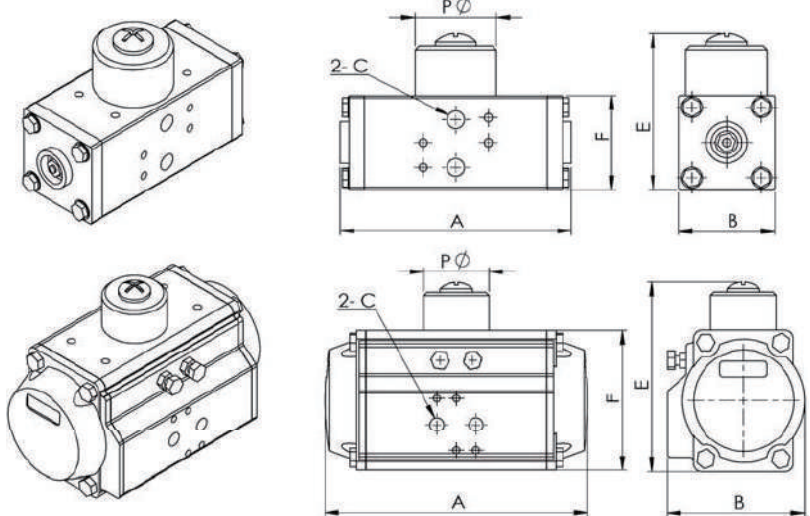


Model	Input pneumatic pressure ( Torqure unit : Nm )							
	3.5 Bar	4 Bar	4.5 Bar	5 Bar	5.5 Bar	6 Bar	7 Bar	8 Bar
AT32D	5	5.7	6.5	7.3	8	8.7	10	11.6
AT50D	11.7	13.5	15.1	16.7	18.4	20	23.4	26.7
AT63D	20.6	23.6	26.5	29.4	32.3	35.3	41.1	47
AT75D	40.8	46.6	52.5	58.3	64.1	69.9	81.5	93.2
AT88D	64.2	73.3	82.5	91.6	101.1	110.1	128.1	146.1
AT100D	93.4	106.3	120.3	133.3	146.3	160.3	186.3	213.3
AT115D	150	172	193	215	236	258	301	344
AT125D	195	223	250	278	303	333	389	444

## AT Series Overall Dimension ( mm )

Model	A	B	C	E	F	P
AT32D	118	45	1/8"	77	47	40

Model	A	B	C	E	F	P
AT50D	144	70.5	1/4"	99	69	40
AT63D	163	83.5	1/4"	115	85	40
AT75D	214	94	1/4"	132	102	40
AT88D	252	105	1/4"	145	115	40
AT100D	270	120	1/4"	157	127	40
AT115D	316	138	1/4"	185	145	62
AT125D	354	147	1/4"	197	157	62



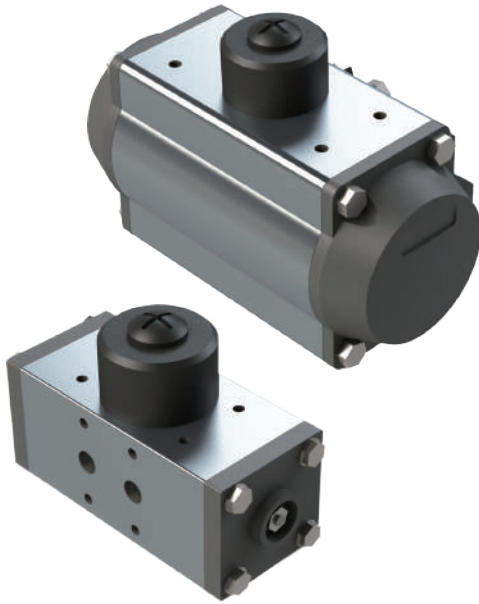


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## PRODUCT/ PNEUMATIC VALVE

### Pneumatic Valve Actuator



### Specifications Characteristics

Model	AT32	AT50	AT63	AT75	AT88	AT100	AT115	AT125
Power voltage	3 - 8 Bar							
Acting range	0 - 90° ± 5°							
Acting time	0.25 - 3 Sec.							
Internal structure	Rack drive							
3 Bar Air pressure torque ( Nm )	4.5	10.0	17.6	34.9	54.9	79.8	129	168
5 Bar Air pressure torque ( Nm )	7.5	16.6	29.3	58.2	91.5	133	215	277
7 Bar Air pressure torque ( Nm )	10.5	23.3	41.0	81.4	128	186	301	388
Environment	Temperature : -20 - 85°C ; Humidity : 10 - 90%RH							
Body Material	Aluminium							
Install direction	360 degrees omni-directional							

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### APL Series Actuator Limit Switches



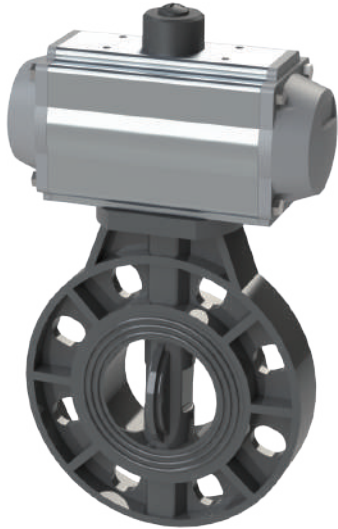
### Specifications Characteristics

Model	APL-210	APL-410
ON / OFF Checking	Full open : Yellow ; Full close : Red	
Protect level	IP67	
Explosive-proof grade		Exd II CT6
Terminals	8 points ( 0.8 - 2.5 m m² )	
Output signal	Switch * 2	
Electriad connection	2 * 1/2" NPT	
Body material	Aluminium die-casting	



# PRODUCT/ PNEUMATIC VALVE

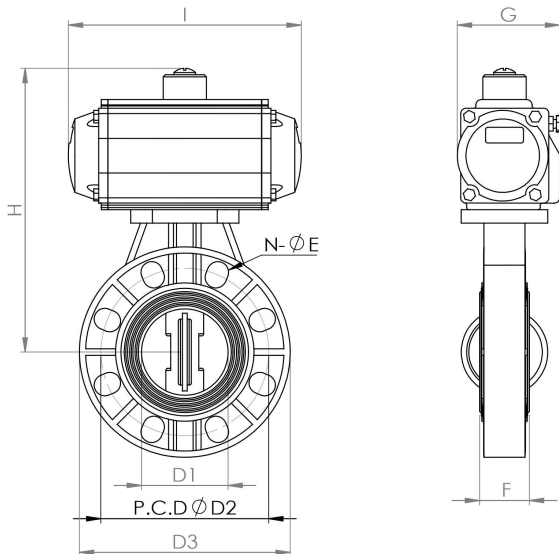
## PVC Pneumatic Wafer-type Butterfly Valve



## Specifications Characteristics

Model	2D-P Series
Medium Temp.	-10°C - 70°C
ENV Temp.	-10°C - 60°C
Pressure	0 - 0.7 Mpa
Actuator Mat.	Aluminum alloy ( Double / Single-acting )
Actuator pressure	0.4 - 0.8 Mpa
Valve body Mat.	UPVC
Valve disc Mat.	UPVC
Gasket Mat.	EPDM
Flange Spec.	JIS, ANSI, DIN

## Dimensions ( mm )



Body Dimension	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300	
Pressure Kg/cm <sup>2</sup>	7	7	7	6	5	5	4	3	3	
JIS	D2	120	140	150	175	210	240	290	335	400
	N-E	4-19	4-19	8-19	8-19	8-23	8-23	12-23	12-25	16-25
ANSI	D2	120.4	139.5	152.4	190.5	216	241.5	298.5	362	432
	N-E	4-19	4-19	4-19	8-19	8-22	8-22	8-22	12-25	12-25
DIN	D2	125	145	160	180	210	240	295	355	412
	N-E	4-18	4-18	8-18	8-18	8-18	8-18	8-23	12-23	12-23
D1	56	71	85	105	131	153	204	255	307	
D3	160	185	195	215	250	285	340	395	445	
F	43	46	46	52	56	56	60	68	78	
H	222	230	262	272	305	363	409	458	510	
I	163	163	214	214	252	316	354	418	450	
G	83.5	83.5	94	94	105	138	147	167	193	
Actuator Suggest	AT 63	AT 63	AT 75	AT 75	AT 88	AT 115	AT 125	AT 145	AT 160	

\* Actuators above the valve are divided into High torque and Low torque, size are different. Actual actuator dimension based on the real product.



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## PRODUCT/ PNEUMATIC VALVE

Accessories for selection



- NAMUR Solenoid Valve -

Single Coil / Twin Coil  
AC110V / 220V ; DC24V

- Hand Wheel -

Body material : Die-casting steel  
Wheel material : Aluminium alloy  
Rotation angle : 180°



- Limit Switch -

8-Points terminal  
Body material : Die-cast aluminum  
C/W Active bracket  
Protect level : IP-67





PRODUCT/ PNEUMATIC VALVE

How to select model

AT 75 D - 2DP 100 A

Actuator Model		Function		Dimension		Body material		Available flange	
Model	Function	Code	Dimension	Code	Material	Code	Flange	Code	
63	Double-Acting	D	2"	50	UPVC		JIS	J	
75	Single-Acting	S	2-1/2"	65			ANSI	A	
88			3"	80					
100			4"	100					
115			5"	125					
125			6"	150					
145			8"	200					
160			10"	250					
			12"	300					

\* Gasket in the valve is EPDM in the factory setting.  
Suggest working temperature: -10°C ~ 70°C